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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,699	09/11/2003	Fu-Jen Ko	TOP 326	4746

7590 03/09/2005

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EXAMINER

PARKER, KENNETH

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/659,699

Applicant(s)

KO ET AL.

Examiner

Kenneth A Parker

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-15 is/are allowed.
- 6) ☒ Claim(s) 1 and 4-8 is/are rejected.
- 7) ☒ Claim(s) 2 and 3 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/11/03, 12/3/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, and 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al 20050001960 in view of Baek 20010048496 and Suzuki 20020080320

Kim discloses method of forming a transfective liquid crystal display device (with a wide-viewing angle), comprising the steps of:

providing a first substrate and a second substrate opposite the first substrate; forming an insulating layer 250 having an uneven surface on the first substrate; forming at least one opening 262 in the insulating layer; forming a conformal reflective electrode 290 on a sidewall and a bottom of the opening (on bottom before patterning) and part of the insulating layer, wherein the reflective electrode has at least one opaque portion and at least one transparent portion, and the transparent portion of the reflective electrode is located in the opening (it is); forming a conformal first alignment film on the reflective electrode (not shown); forming a common electrode 50 on an inner surface of the second substrate; forming a second alignment film on the common electrode (not shown);

Art Unit: 2871

and filling a space between the first substrate and the second substrate (column 2 in the background of the invention) with negative type liquid crystal molecules added with a chiral agent to form a liquid crystal layer (not shown negative with chiral).

Baek discloses a homeotropic liquid crystal with alignment layers above the electrodes in page 6, paragraph 62 (note: the alignment layer, but not the abovementioned features of Kim. Kim discloses that their device enables an increased contrast ratio (page 3, paragraph 41). Therefore it would have been obvious to one of ordinary skill modify the device of Baek (embodiment having homeotropic alignment layers and negative dielectric) to employ the structure of Kim for the benefit of high contrast.

Still lacking from the device of Baek as modified by Kim is the use of chiral material. Chiral material was well known for increasing stability and speed (see Suzuki paragraph 76:

"For the homeotropic alignment, the liquid crystal molecules are rearranged to form a twisted or helical path when a voltage is applied. A chiral agent may be added to stabilize this orientation and increase the response speed."

Therefore it would have been obvious to one of ordinary skill to add chiral material to the liquid crystal for the benefit of increased speed and/or stability).

Regarding claim 4, the reflective electrode and the common electrode, an asymmetric electric field occurs at a fringe portion of the reflective electrode (the structure is asymmetric as it has an insulation portion and pixel portion, so the field will have to be asymmetric around the border (it is inherent).

Regarding claim 5, the opaque portion is reflective electrode is an aluminum layer.

Regarding claim 6, the transparent portion of the reflective electrode is an ITO (indium tin oxide) layer.

Regarding claims 7-8, it was well known that rubbing caused static electricity damage, and that non-rubbing techniques could be used to avoid this (such as uv photopolymer alignment and ion bombardment). Therefore it would have been obvious to one of ordinary skill to use non-rubbing alignment techniques to avoid static damage associated with rubbing.

Allowable Subject Matter

Claims 9- 15 are allowed.

Claims 2-3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


The following is a statement of reasons for the indication of allowable subject matter: The claimed protruding element combined with the claimed structure. The secondary reference Suzuki teaches protruding elements (as do many others), but since these devices operate on the surface topography of the bounding surfaces and or fringe fields, it would not be combinable with a device with as sharply different a shape as Kim or Baek.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth A. Parker whose telephone number is 571-272-2298. The examiner can normally be reached on M-F 10:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kenneth A Parker
Primary Examiner
Art Unit 2871